

In the claims:

1 1. In a first radio communication system in which a selected portion of a frequency
2 band is dynamically selectable upon which to communicate a first-system-type data packet, the
3 frequency band also selectably utilized by a second radio communication system upon which
4 selectably to communicate a second-system-type data packet, an improvement of apparatus for a
5 communication station operable in the first radio communication system, said apparatus at least
6 for reporting whether the portion of the frequency band to which the communication station is
7 tuned is being used to communicate the first-system-type data packet, said apparatus comprising:
8 an indicator at least coupled to receive an inciation of a determination of whether
9 the first-system-type data packet is communicated upon the portion of the frequency band to
10 which the communication station is tuned, said indicator for generating an indication signal
11 representative of the determination; and
12 a reporter coupled to receive the indication signal generated by said indicator, said
13 reporter for generating a report message that includes a field populated with a value indicative of
14 the indication signal generated by said indicator.

1 2. The apparatus of claim 1 wherein the communication station comprises a receive
2 portion and wherein said indicator comprises an activity determiner coupled to the receive
3 portion; said activity determiner for determining activity upon the selected portion of the
4 frequency band to which the communication station is tuned, said activity determiner for
5 indicating at least when communication energy is determined to be present upon the selected
6 portion of the frequency band.

1 3. The apparatus of claim 2 in which the communication system is operable pursuant
2 to an operational protocol which defines a clear channel assessment operation and wherein said
3 activity determiner performs a clear channel assessment operation.

1 4. The apparatus of claim 3 wherein said indicator further comprises a decoder
2 coupled to said activity determiner and coupled to receive indications of the communication
3 energy when determined to be present upon the selected portion of the frequency band, said
4 decoder for decoding at least part of the communication energy to determine whether the
5 communication energy comprises at least one of the first-system-type data packet and the
6 second-system-type data packet.

1 5. The apparatus of claim 4 wherein the first-system-type data packet is defined in
2 terms of logical layers including a physical (PHY) layer and at least one higher-level layer, and
3 wherein said identifier further comprises a packet address detector operable responsive to
4 determination by said decoder that the communication energy comprises at least one of the first-
5 system-type and second-system-type data packets, respectively, said packet address detector for
6 detecting whether the at least one of the first-system-type and second-system-type data packets
7 further comprises a packet address in the higher-level layer.

1 6. The apparatus of claim 5 wherein the first-system-type data packet is formatted
2 according to a selected higher-level layer protocol and wherein said packet address detector
3 detects when the communication energy comprises the data packet formatted according to the
4 selected higher-level layer protocol.

1 7. The apparatus of claim 6 wherein the first radio communication system is
2 operable pursuant to an IEEE (Institute of Electrical and Electronic Engineers) 802.11 standard
3 and wherein said packet detector detects when the communication energy comprises an IEEE
4 802.11-formatted data packet.

1 8. The apparatus of claim 1 wherein the field of the report message generated by
2 said reporter is formed of a first digital value when the indication signal is of a first value and is
3 formed of another digital value when the indication signal is other than the first value.

1 9. The apparatus of claim 1 wherein the first radio communication system is
2 operable pursuant to an IEEE (Institute of Electrical and Electronic Engineers) 802.11 standard
3 and wherein the field of the report message generated by said reporter is of a value indicative of
4 whether an 802.11-standard-formatted data packet is determined to be communicated upon the
5 portion of the frequency band to which the communication station is tuned.

1 10. The apparatus of claim 9 wherein the second-system-type data packet is formatted
2 pursuant to a foreign, relative to the IEEE 802.11 standard, PLCP (physical layer convergence
3 protocol) and wherein said indicator distinguishes between the 802.11-standard-formatted data
4 packet on a foreign-PLCP-formatted data packet forming the second-system-type data packet.

1 11. The apparatus of claim 10 wherein said reporter generates a communication-
2 station measurement summary and wherein the field populated with the value indicative of the

- 3 indication signal generated by said indicator comprises a portion of the communication-station
- 4 measurement summary.

1 12. In a method for communicating in a first radio communication system in which a
2 selected portion of a frequency band is dynamically selectable upon which to communicate a
3 first-system-type data packet, the frequency band also selectably utilized by a second radio
4 communication system upon which selectably to communicate a second-system-type data
5 packet, an improvement of a method for a communication station operable in the first radio
6 communication system, said method at least for reporting whether the portion of the frequency
7 band to which the communication station is tuned is being used to communicate the first-system-
8 type data packet, said method comprising:

9 generating an indication signal representative of a determination of whether the
10 first-system-type data packet is communicated upon the portion of the frequency band to which
11 the communication station is tuned; and

12 forming a report message that includes a field populated with a value indicative of
13 the indication signal generated during said operation of generating.

1 13. The method of claim 12 comprising the additional operation, prior to said
2 operation of generating, of determining activity upon the selected portion of the frequency band
3 to which the communication station is tuned, the activity upon the selected portion of the
4 frequency band indicated at least when communication energy is determined to be present upon
5 the selected portion of the frequency band.

1 14. The method of claim 13 wherein the communication system is operable pursuant
2 to an operational protocol which defines a clear channel assessment operation, and wherein said
3 operation of determining comprises performing a clear channel assessment operation.

1 15. The method of claim 14 further comprising the operation, subsequent to said
2 operation of performing, of decoding at least part of the communication energy, when
3 determined during said operation of determining to be present, to determine whether the
4 communication energy comprises at least one of the first-system-type data packet and the
5 second-system-type data packet.

1 16. The method of claim 15 wherein the first-system-type data packet is defined in
2 terms of logical layers including a PHY (physical) layer and at least one higher-level layer, and
3 wherein said method further comprises the operation of detecting whether the at least one of the
4 first-system-type and second-system-type data packets, respectively, further comprises a packet
5 address in the higher-level layer.

1 17. The method of claim 16 wherein the first radio communication system is operable
2 pursuant to an IEEE (Institute of Electrical and Electronic Engineers) 802.11 standard and
3 wherein said operation of detecting comprises detecting when the communication energy
4 comprises an IEEE 802.11-formatted data packet.

1 18. The method of claim 13 wherein the first radio communication system is operable
2 pursuant to an IEEE (Institute of Electrical and Electronics Engineers) 802.11 standard and
3 wherein the field of the report message generated during said operation of generating is of a
4 value indicative of whether an 802.11-standard-formatted data packet is determined to be
5 communicated upon the portion of the frequency band to which the communication station is
6 tuned.

1 19. In a communication station operable pursuant to an IEEE (Institute of Electrical
2 and Electronics Engineers) 802.11 standard within a frequency band also used by another
3 communication system, an improvement of measurement summary apparatus at the
4 communication station, said measurement summary apparatus comprising:
5 a selected field populator for populating a selected field of a measurement
6 summary with an indication of whether a portion of the frequency band to which the
7 communication station is tuned is being used to communicate an 802.11-standard-formatted data
8 packet.

1 20. A method for changing the channel assignment in a wireless LAN system using a
2 clear channel assignment mechanism for randomly accessing a channel, said method comprising
3 the steps of:
4 tuning to the desired frequency ;
5 performing a Clear Channel Assessment test ;
6 determining a beacon decodability; and
7 reporting a physical layer and a media access control to an access point.